

IMPROVED METHOD AND APPARATUS FOR DISPLAY OF WINDOWING APPLICATION PROGRAMS ON A TERMINAL

ABSTRACT

5 A video display terminal capable of operating with a graphical user interface such as
Windows provides windowing functionality to permit use of popular applications programs
resident on a server, without requiring more than application data to be transmitted from the
server, and keyboard and mouse information to be transmitted from the terminal to the server.
The terminal includes processing means, not fully compatible with personal computer BIOS or
10 disk operating systems and incapable of executing windowing applications locally, adapted to
receive windowing information supplied by programs executing on a remotely located
application server. The terminal also includes a display for the windowing information supplied
by programs executing on the remotely located application server. The invention provides FTP
and SNMP capabilities along with a number of user interface enhancements, DHCP and SNMP
15 enhancements. File information is transferred to and from the terminal using a communications
protocol. One or more image upgrades are transferred to the terminal from the remotely located
application server. Configuration data for the terminal can also be transferred to the terminal
from the remotely located application server. The present invention further provides for
simultaneously maintaining more than one connection between the terminal and server and
20 establishing more than one virtual machine on the terminal with each virtual machine running an
open session. Each virtual machine stops sending and receiving data to and from the server
when an application resides in the background session. Each virtual machine commands the
server to refresh the data for the application when the application is switched to the foreground.